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APPENDIX I: Sensitivity of MPS Values to CSO Costs for Case Study Areas

Cities in the watershed that have combined sanitary and storm water sewer systems experience combined sewer overflow (CSO) events when flows from both sources exceed the system capacity. During CSO events, untreated wastes are directly discharged to receiving waters. EPA developed the Combined Sewer Overflow Control Policy (published April 19, 1994) to control CSOs through the National Pollutant Discharge Elimination System (NPDES) permitting program. The Policy provides guidance to municipalities and State and Federal permitting authorities on how to meet the Clean Water Act's pollution control goals in a flexible and cost-effective manner so as to accommodate a community's financial capability. The Policy requires implementation of minimum technology-based controls (the "nine minimum controls") not expected to require significant engineering studies or major construction by January 1, 1997. Communities with combined sewer systems are also expected to develop long-term control plans (LTCP) that will ultimately provide for full compliance with the Clean Water Act, including attainment of water quality standards.

CSO communities are now in various stages of developing and implementing their long-term control plans, including characterizing their combined sewer systems, monitoring the impacts of CSOs on waterways, and discussing water quality and CSO control goals with permitting authorities, water quality standards authorities, and rate payers. CSO control costs that are not contributed by State and Federal grants will be paid by urban residents either in the form of POTW service fees or municipal taxes. Due to the uncertainty in what these costs will be, future CSO costs are not included in current (2001–2002) sewer fees analyzed as part of the economic screening analyses provided in Appendix H. Estimated future CSO costs can be added to POTW costs for the tier scenarios to evaluate the sensitivity of the Municipal Preliminary Screener (MPS) for the POTW sector. As described in Appendix H, the MPS is a preliminary screener value above which triggers a need to perform secondary tests of substantial impact and a widespread analysis.

This appendix provides analysis of the sensitivity of the MPS that reflects Tier 3 POTW costs to additional rate increases due to CSO control plans for three cities: Washington, D.C., Lynchburg, Virginia, and Richmond, Virginia. The results for the District's recommended LTCP (in public comment phase) indicate that, even without any Federal funding, adding the estimated CSO control costs to Tier 3 POTW costs would not trigger the secondary test for substantial impacts (i.e., substantial impacts are unlikely). Note that some portion of the selected alternative may double count storm water control costs included in the Tier 3 scenario. For Lynchburg, the increase in the estimated MPS due to CSO controls triggers the secondary test to determine if there are substantial financial impacts. However, given the terms of the City's CSO consent special order, annual expenditures on CSOs will more likely slow to a rate which reflects a lower MPS. CSO control plans are uncertain for Richmond. The estimated MPS values for three alternative under review trigger the secondary test. However, the CSO control plan is still in the preliminary phase and will likely be revised before implemented. Also, since the MPS values for

Richmond—like those for the District—do not include any funding for CSO control costs, actual impacts may be overstated.

The detailed analyses for these areas follow. Exhibit I-6 provides a list of all of the CSOs in the Chesapeake Bay watershed and indicates their LTCP status.

1. WASHINGTON, D.C.

There are a total of 60 CSO outfalls listed in the District's existing permit. The District considered a wide range of technologies in developing a long term control plan (LTCP) for controlling CSOs. These technologies include:

- C Source Controls – such as public education, a higher level of street sweeping, additional construction site controls, more frequent catch basin cleaning, garbage disposal bans, and combined sewer flushing
- C Inflow Controls – such as Low Impact Development-Retrofit (LID-R), rooftop greening, storm water treatment, street storage of storm water, rain leader disconnections, and extending storm sewers to receiving waters
- C Sewer System Optimization – such as real time control, storing combined sewage in existing sewers, and revision to facility operations
- C Sewer Separation – such as partial or complete separation
- C Storage Technologies – such as retention basins and tunnels
- C Treatment Technologies – such as screening, sedimentation, high rate physical chemical treatment, swirl concentrators, and disinfection
- C Receiving Water Improvement – such as aeration and flow augmentation.

The District evaluated each technology for its ability to reduce CSO volume and pollutants. After an initial screening, it assembled groups of technologies into control plans for each receiving water. The alternatives are based on regulatory compliance, cost effectiveness, flooding, operational factors (e.g., ability to implement, operational complexity, and ability to upgrade), and public acceptance.

The District selected the recommended LTCP because it will provide a significant improvement in the quality of each receiving water as well as affordable to ratepayers. The plan will meet or exceed EPA guidelines for both the number of overflow events and the percentage of combined sewage that is captured for treatment in the combined sewer system.

Exhibit I-1 summarizes the component costs of the selected LTCP for each sector. The costs in Exhibit I-1 represent draft estimates and have not been finalized. The District's Water and Sewer

Authority (WASA) is in the process of responding to public comments and completing a final report. Once the selected LTCP is approved, WASA predicts a 20 year implementation period for the controls. Although WASA has identified some early actions items which are not dependent on approval of the LTCP, it is not known if any implementation of these items has begun.

Exhibit I-1: Recommended Washington, D.C., LTCP Elements and Draft Estimated Costs
(Millions of 2001 \$)

Component	Capital Costs	O&M Costs
System Wide		
Low Impact Development – Retrofit: advocate implementation of LID-R throughout entire District. Provide technical and regulatory assistance to District Government. Implement LID-R projects where feasible.	3.0	0.15
Anacostia River		
Rehabilitate Pumping Stations 1. Interim improvements at Main and 'O' Street Pumping Stations necessary for reliable operation until rehabilitation of stations is performed. 2. Rehabilitate Main Pumping Station to 240 mgd firm sanitary capacity. 3. Rehabilitate Eastside and 'O' Street pumping stations to 45 mgd firm sanitary capacity. 4. Interim improvements at existing Poplar Point pumping station necessary for reliable operation until replacement pumping station is constructed as part of storage tunnel.	115	–
Storage Tunnel from Poplar to Northeast Boundary Outfall – 36 mg storage tunnel will intercept CSOs 009 through 019 on the west side of the Anacostia. Project includes new tunnel dewatering pump station and low lift pumping station at Poplar Point.	276	9.05
Storage/Conveyance Tunnel Parallel to Northeast Boundary Sewer – 59 mg storage/conveyance tunnel includes side tunnels from main tunnel along West Virginia and Mt. Olivet Avenues, NE and Rhode Island and 4th St, NE, to relieve flooding. Abandon Northeast swirl facility upon completion of main tunnel.	414	
Ft. Stanton Interceptor – 66-inch pipeline from Fort Stanton to Poplar Point to convey CSO 005, 006, and 007 on the east side of Anacostia storage tunnel.	11	0.05
Rock Creek		
Separate Luzon Valley (CSO 059) – Complete separation of this drainage.	2	0
Storage Tunnel for Piney Branch (CSO 049) – 3.8-mg storage tunnel	32	0.45
Monitoring at CSO 031, 033, 036, 037, 047, and 057 – Monitor to confirm prediction of overflows. If overflows confirmed, then perform the following: • Improve regulators for CSO 031, 033, 036, 037, 047, and 057 • Relieve Rock Creek Main Interceptor to proposed Potomac Station Tunnel when constructed	5	0.05

Exhibit I-1: Recommended Washington, D.C., LTCP Elements and Draft Estimated Costs
(Millions of 2001 \$)

Component	Capital Costs	O&M Costs
Potomac River		
Rehabilitate Potomac Pumping Station – Rehabilitate to firm 460 mgd capacity	12	–
Potomac Storage Tunnel – 28-mg storage tunnel from Georgetown to Potomac pumping station. Includes new tunnel dewatering pumping station.	158	2.70
Blue Plains Wastewater Treatment Plant		
Excess Flow Treatment Improvements – four new primary clarifiers, improvements to excess flow treatment control and operations	22	0.4
Total	1,050	12.85

A dash (–) indicates no significant change in costs would be incurred from existing operations.

Source: DCWASA (2001). Costs represent draft estimates and have not been finalized.

Exhibit I-2 summarizes how the District’s LTCP compares with the costs the District provided the Chesapeake Bay Program for reducing CSOs in DC under the tier scenarios.

Exhibit I-2. CSO Control Cost Estimates

Description	Capital Costs (Millions of \$)	Source
Tier 3 – 43% reduction in CSOs	130	D.C. Water and Sewer Authority, CBP Nutrient Removal Technology Task Force
Recommended LTCP – 89% reduction in CSO volume	1,050	D.C. Water and Sewer Authority
Tier 4 – Elimination of all CSOs (complete separation)	1,050–3,500	D.C. Water and Sewer Authority, CBP Nutrient Removal Technology Task Force

Exhibit I-3 provides a summary of the calculation of the MPS for Washington, D.C., with and without CSO control costs. The CSO control costs presented below are based on the recommended plan in the District’s draft LTCP. Therefore, the costs presented in the exhibit below overestimate the costs required to achieve the reductions specified for Tier 3.

Estimates in the “2000 Baseline” column show information for 2000 along with the MPS for the current annual sewer rate of \$196. Estimates in the “2010 Tier 3” column show the estimated incremental control costs applicable to D.C. for the Blue Plains WWTF to meet the effluent concentration requirements of Tier 3, and the resulting MPS. Finally, estimates in the third column show the estimated combined costs of the D.C. portion of POTW controls under Tier 3, plus CSO control costs based on the DCWASA estimate. (Note that some portion of the system-wide cost for Low Impact Development may double count costs for storm water controls included in Tier 3.) Exhibit I-3 shows that the estimated MPS for Tier 3 POTW controls is 0.55%, and the estimated MPS when CSO controls are added is 0.92%. This implies that adding the estimated CSO control costs would not trigger the secondary test for substantial impacts.

Exhibit I-3: Calculation of Municipal Preliminary Screener Value for District of Columbia

	2000 Baseline	2010 Tier 3	Tier 3 + CSO
Average Flow (mgd)	152.4	163.8 ¹	163.8 ¹
Percent Residential Flow ²	50%	50%	50%
Households Served	248,338 ³	250,451 ⁴	250,451 ⁴
Total Capital Cost ⁵	–	\$127,268,400 ⁶	\$1,177,268,400 ⁷
Expected Grant Funding	–	0%*	0%*
Estimated Interest Rate**	–	2.4%	2.4%
Annualized Capital Cost Borne by Households ⁸	–	\$4,043,492	\$37,403,436
O&M Cost	–	\$10,692,850 ⁵	\$23,058,940 ⁶
Annual Cost per Household ⁹	–	\$37	\$195
Annual Sewer Rate ¹⁰	\$196	\$233 ¹¹	\$391 ¹¹
Estimated Median Household Income ¹²	\$42,656	\$42,656	\$42,656
Estimated MPS Value ¹³	0.46%	0.55%	0.92%

'-' = not used to calculate annual sewer rate (see note 10).

1. Source: CBP Point Source Nutrient Reduction Task Force Workgroup.

2. Source: DCWASA, 2001.

3. Source: U.S. Census Bureau, 2002.

4. Calculated by multiplying current households by the Chesapeake Bay Program's projected growth rate of 1.0085 for DC.

5. Costs allocated to households in proportion to household flow.

6. Source: CBP Point Source Nutrient Reduction Task Force Workgroup. Reflects Tier 3 Blue Plains NRT costs allocated to District residents based on methodology provided by MWWCOG (2002).

7. Tier 3 NRT costs for DC portion of Blue Plains plus CSO costs (see Exhibit I-1) of \$1.05 billion (DCWASA, 2001). Note that there may be some overlap between CSO controls and urban BMPs in the Tier 3 scenario, in which case CSO costs may be lower.

8. Estimated by multiplying percent residential flow by total capital cost less grant funding and annualizing at estimated interest rate over 20 years.

9. Annualized capital plus annual O&M cost borne by households divided by estimated households served.

10. Source: T. Spano, Metropolitan Washington Council of Governments, personal communication, 2002.

11. Current sewer rate plus estimated additional annual cost per household.

12. U.S. 2000 Decennial Census, 2002, updated to 2001 dollars using the Consumer Price Index.

13. Estimated sewer rate divided by estimated median household income.

14. Using the NRT Task Force Tier 3 CSO costs of \$350 million, that would result in a 43% reduction in CSOs, the MPS would be 0.71%.

* Federal funding possible but not incorporated.

**Estimated as national average of State Revolving Loan Rates.

2. LYNCHBURG, VA

Since Lynchburg's CSO work began, the City has eliminated 73 of the original 132 overflow points, leaving 59 points to be closed in the future. So far, the City has completed 18 interceptor projects and 20 separation construction projects. A CSO control study, first conducted in 1989, was updated in 2000. The 2000 update evaluates the feasibility of two control alternatives:

- C Complete separation of the storm and sanitary sewers in all mini-systems (there are 21 mini-systems)
- C Complete separation of the storm and sanitary sewers except in mini-system S-1-A in the downtown area where conveyance and treatment/retention would be utilized instead.

The City of Lynchburg estimates that the total future costs (current sewer rates already reflect current costs) of implementing the CSO control plan are \$276 million (City of Lynchburg Department of Public Works, 2000). These costs include interceptor replacement and collector sewers, the rainleader disconnect program, separation and rehabilitation projects, separation and rehabilitation indirect costs, and water system costs associated with separation and rehabilitation projects. Lynchburg expects to receive at least \$10 million per year in grant funding for CSO control projects (City of Lynchburg Department of Public Works, 2000).

Lynchburg has a consent order with the Virginia Department of Environmental Quality that ties CSO expenditures to the city's median household income and other variables. This arrangement with the DEQ allows the city to cap CSO expenditures provided that the annual sewer bill for residential customers with 900 cubic feet (6,732 gallons) of average monthly use is at least 1.25% of median household income, as long as certain other conditions are met (VA DEQ, 1994).

Exhibit I-4 provides a summary of the calculation of the MPS for Lynchburg. The 2000 Baseline column provides current data. The 2010 Tier 3 column shows the calculation of the MPS under Tier 3 controls, and the Tier 3 + CSO column shows the calculation of the MPS under Tier 3 controls plus estimated CSO control costs.

The estimated MPS under Tier 3 is 1.87%, and the estimated MPS due to Tier 3 and CSO controls is 2.34%. An MPS value of over 1% indicates that the secondary substantial test would have to be evaluated to determine if there are substantial financial impacts. However, an evaluation of substantial impacts would have to take into account that the City of Lynchburg would still be in compliance with EPA's 1994 CSO Policy, as implemented by the Virginia State Water Board of the DEQ, as long as the total sewer rate for an average residence is at least 1.25% of median household income VA DEQ (1993). Therefore, annual expenditures on CSOs of the magnitude shown in the exhibit are not likely.

Exhibit I-4: Calculation of Municipal Preliminary Screener Value for Lynchburg, VA

	2000 Baseline	2010 Tier 3	Tier 3 + CSO
Average Flow (mgd)	13.2	17.4 ¹	17.4 ¹
Percent Residential Flow ²	52%	52%	52%
Households Served	19,400 ³	18,081 ⁴	18,081 ⁴
Total Capital Cost ⁵	–	\$56,223,612 ⁶	\$332,223,612 ⁷
Expected Grant Funding	–	10%*	10% for Tier 3 costs \$10 million annually for CSO costs ⁸
Estimated Interest Rate	–	3.9%	3.9%
Annualized Capital Cost Borne by Households ⁹	–	\$1,066,125	\$3,948,385
O&M Cost	–	\$4,520,868 ⁵	\$4,520,868 ⁶
Annual Cost per Household ¹⁰	–	\$144	\$241
Yearly Sewer Rate ¹¹	\$406	\$550 ¹²	\$647 ¹²
Estimated Median Household Income ¹³	\$34,266	\$34,266	\$34,266
Estimated MPS Value ¹⁴	1.18%	1.87%	2.34%

‘–’ = Not used in calculation of annual sewer rate (see note 10).

1. Source: CBP Point Source Nutrient Reduction Task Force Workgroup.

2. Source: Virginia DEQ, 2000.

3. Data on number of residential users from VA DEQ (2000) reflects predicted accounts in 2001.

4. Calculated by multiplying estimated 2000 households served by the Chesapeake Bay Program's projected growth rate of 0.932 for Amherst County.

5. Costs allocated to households in proportion to household flow.

6. Source: CBP Point Source Nutrient Reduction Task Force Workgroup.

7. CSO control costs (City of Lynchburg Department of Public Works, 2000) of \$276 million, plus Tier 3 POTW costs.

8. Anticipated grant funding for CSO controls is \$10 million per year (City of Lynchburg Department of Public Works, 2000).

9. Estimated by multiplying percent residential flow by total capital cost less grant funding and annualizing at estimated interest rate over 20 years.

10. Annualized capital plus annual O&M costs borne by households divided by estimated households served.

11. Source: Virginia DEQ, 2000. (Note that the screening analysis reflects a rate of \$289 from the Draper Aden survey, but several sources have confirmed the higher rate)

12. Current sewer rate plus estimated additional annual cost per household.

13. U.S. 2000 Decennial Census, 2002, updated to 2001 dollars using the Consumer Price Index.

14. Estimated sewer rate divided by estimated median household income.

*Source: UAA Workgroup.

3. RICHMOND

The Richmond WWTP treats sanitary wastewater from the City of Richmond as well as any storm water that overflows from the sewer system during heavy rain events. In order to reduce the storm water overflow, the Richmond Department of Public Utilities (DPU) has embarked on a CSO control program to construct huge sewer lines along both sides of the James River to protect the aquatic and recreational environment from untreated sewer overflows. On the north side of the river, 1.3 miles of pipe up to 8 feet in diameter have been installed in the beds of the Haxall and Kanawha canals. This pipeline collects wastewater that has overwhelmed the sewers and routes it to the 50-million gallon retention basin until it can be treated at the wastewater treatment plant. An additional retention structure, due to be in service as of June 2002, will capture overflows further upstream.

The City has a preliminary LTCP containing a number of alternative scenarios for controlling or eliminating CSOs. Since the control plan is still in the draft phase and no one alternative has been chosen over the other, **Exhibit I-5** summarizes the MPS for three alternatives.

The estimated MPS for Tier 3 (1.48%), and Tier 3 and CSO controls (1.95% for Alternative 1, 3.33% for Alternative 2, and 5.62% for Alternative 3) are over 1%. An MPS value of over 1% indicates that the secondary substantial test would have to be evaluated to determine if there are substantial financial impacts. However, the CSO control plan is still in the preliminary phase and will likely be revised before implemented. Also, since the MPS values calculated do not include any funding for CSO control costs, actual impacts may be overstated.

Exhibit I-5: Calculation of Municipal Preliminary Screener Value for Richmond, VA

	2000 Baseline	2010 Tier 3	Tier 3 + CSO Alternative 1	Tier 3 + CSO Alternative 2	Tier 3 + CSO Alternative 3
Average Flow (mgd)	48.0	48.0 ¹	48.0 ¹	48.0 ¹	48.0 ¹
Percent Residential Flow ²	90%	90%	90%	90%	90%
Households Served	89,856 ³	84,705 ⁴	84,705 ⁴	84,705 ⁴	84,705 ⁴
Total Capital Cost ⁵	–	\$80,000,000 ⁶	\$294,000,000 ⁷	\$880,000,000 ⁷	1,860,000,000 ⁷
Expected Grant Funding	–	10%*	10% for Tier 3* 0% for CSOs**	10% for Tier 3* 0% for CSOs**	10% for Tier 3* 0% for CSOs**
Estimated Interest Rate	–	3.9%	3.9%	3.9%	3.9%
Annualized Capital Cost Borne by Households ⁸	–	\$4,725,972	\$17,367,947	\$51,985,692	\$109,878,848
O&M Cost ^{5,6}	–	\$2,057,412	\$2,057,412	\$2,057,412	\$2,057,412
Annual Cost per Household ⁹	–	\$78	\$233	\$687	\$1,446
Yearly Sewer Rate	\$41,410	\$491 ¹¹	\$646 ¹¹	\$1,100 ¹¹	\$1,860 ¹¹
Estimated Median Household Income ¹²	\$33,082	\$33,082	\$33,082	\$33,082	\$33,082
Estimated MPS Value ¹³	1.25%	1.48%	1.95%	3.33%	5.62%

¹ = Not used in calculation of annual sewer rate (see note 10).

1. Source: CBP Point Source Nutrient Reduction Task Force Workgroup.

2. Source: Personal communication with Richmond WWTP Operator, Clair Watson, 2002.

3. Source: U.S. Census of Population and Housing. 2002.

4. Calculated by multiplying estimated 2,000 households served by the Chesapeake Bay Program's projected growth rate of 0.943 for Richmond.

5. Costs allocated to households in proportion to household flow.

6. Source: CBP Point Source Nutrient Reduction Task Force Workgroup.

7. CSO control costs (e-mail from Bob Ehrhart VADEQ, 2002) of \$214 million for Alternative 1, \$800 million for Alternative 2, and \$1,780 million for Alternative 3, plus Tier 3 POTW costs.

8. Estimated by multiplying percent residential flow by total capital cost less grant funding and annualizing at estimated interest rate over 20 years.

9. Annualized capital plus annual O&M costs borne by households divided by estimated households served.

10. Source: Richmond DPU, 2002. (Based on an average water usage rate of 10Ccf per month)

11. Current sewer rate plus estimated additional annual cost per household.

12. U.S. 2000 Decennial Census, 2002, updated to 2001 dollars using the Consumer Price Index.

13. Estimated sewer rate divided by estimated median household income.

*Source: UAA Workgroup.

**Funding possible but not incorporated.

Exhibit I-6. CSOs in the Chesapeake Bay

NPDES No.	City	Name	LTCP	LTCP Status
DC0021199	District of Columbia	DC WASA (Blue Plains)	Y	LTCP published June 2001.
DE0020265	Seaford	Seaford WWTP	Y	Permit renewal (7/25/01) reported that 3 of 4 CSO outfalls have been removed and last one will be removed by 3/1/03.
MD0021571	Salisbury	Salisbury City STP	Y	MDE reports that LTCP approved (presumptive approach).
MD0021598	Cumberland	Cumberland WWTP	Y	MDE has reviewed LTCP (presumptive approach).
MD0021601	Baltimore	Patapsco WWTP	Y	MDE has reviewed LTCP (complete separation).
MD0021636	Cambridge	Cambridge WWTP	Y	MDE has reviewed LTCP (complete separation).
MD0022764	Snow Hill	Snow Hill W&S Department	?	CSOs were confirmed from an MDE inspection. No information regarding a LTCP available.
MD0067384	Westernport	Westernport CSS	Y	MDE has reviewed LTCP (presumptive approach).
MD0067407	Cumberland	Allegany County CSO	Y	MDE reports that community proposes to eliminate CSOs when Frostburg completes separation. MDE has reviewed LTCP.
MD0067423	Frostburg	Frostburg CSS	Y	MDE had reviewed the LTCP, complete separation.
MD0067547	LaVale	Town of LaVale Sewer System	Y	MDE reports that community proposes to eliminate CSOs when Frostburg completes separation. NMC required. LTCP submitted but not yet approved (as of 6/15/01).
PA0020940	Tunkhannock	Tunkhannock Boro MA	Y	LTCP reviewed on 6/19/01.
PA0021237	Newport	Newport Boro MA	Y	LTCP approval includes complete separation of CSO/SSO by 2005.
PA0021539	Williamsburg	Williamsburg Boro	?	LTCP scheduled submittal date 11/01/01.
PA0021571	Marysville	Marysville MA	Y	LTCP approved 9/24/96.
PA0021687	Wellsboro	Wellsboro MA	Y	LTCP reviewed 2/27/01.
PA0021814	Mansfield	Mansfield MA	Y	LTCP approved 11/07/00 (presumptive approach).
PA0022209	Bedford	Bedford Borough MA	?	LTCP scheduled submittal date 02/01/02.
PA0023167	Kane	Kane Boro (Pine St Plant)	Y	LTCP contingent on completion of CO&A milestones (CO&A requires sampling of CSO bypass).
PA0023175	Kane	Kane Boro (Kinzua St Plant)	Y	LTCP reviewed on 12/8/99.
PA0023248	Berwick	Berwick Area SA	?	EPA objected to draft permit on 11/14/00. Must submit LTCP within 545 days of CO&A (7/26/01).
PA0023558	Ashland	Ashland Boro	N	Has 6 BMPs in permit. LTCP scheduled submittal date is 1/16/03
PA0023736	Susquehanna	Tri-Boro MA	Y	LTCP approved 4/9/01 (presumption approach).
PA0024341	Canton	Canton Boro Authority	N	LTCP scheduled submittal date 01/01/03.
PA0024406	Mount Carmel	Mount Carmel Boro	N	Approval of LTCP withheld pending Act 537 update (changes to CSS). LTCP reviewed on 11/12/98 (presumptive approach).
PA0024481	Meyersdale	Meyersdale Boro	?	No data available.
PA0024716	Freeland	Freeland Boro MA	N	No LTCP status comment.
PA0025224	St. Clair	St. Clair SA	Y	LTCP reviewed on 7/13/01.

Exhibit I-6. CSOs in the Chesapeake Bay

NPDES No.	City	Name	LTCP	LTCP Status
PA0025810	Central City	Shade-Central City Authority	?	No data available.
PA0026107	Wilkes Barre	Wyoming Valley SA	Y	LTCP approved 11/27/00 (demonstration approach).
PA0026191	Huntington	Huntington Boro	?	No data available.
PA0026310	Clearfield	Clearfield MA	Y	PADEP CSO Table indicated LTCP received on 6/16/99.
PA0026361	Duryea	Lower Lackawanna Valley SA	?	Area has earmarked \$10M for CSO work.
PA0026492	Scranton	Scranton City SA	Y	LTCP approved 6/21/00. City has earmarked \$10M for CSO work.
PA0026557	Sunbury	Sunbury City MA	Y	LTCP reviewed 3/31/01 (presumptive approach).
PA0026743	Lancaster	Lancaster City	?	No data available.
PA0026921	Hazleton	Greater Hazleton Joint SA	Y	LTCP reviewed on 7/17/01. No mention of development/ implementation of LTCP in draft permit.
PA0027014	Altoona	Altoona City Authority	?	No data available.
PA0027022	Altoona	Altoona City Authority	?	No data available.
PA0027049	Williamsport	Williamsport SA (west)	Y	LTCP reviewed 1/27/01 (presumptive approach). City has earmarked \$4M for building additional treatment capacity to treat combined sewage. \$2M project to be shared with Central SA.
PA0027057	Williamsport	Williamsport SA (central)	Y	PADEP's CSO Table indicated LTCP received on 1/27/01 (presumptive approach). \$2M project to be shared with West SA.
PA0027065	Dickson	Lackawanna River SA (major)	?	No data available.
PA0027081	Dickson	Lackawanna River SA (minor)	?	No data available.
PA0027090	Dickson	Lackawanna River SA (major)	?	No data available.
PA0027197	Harrisburg	Harrisburg Authority	?	No data available.
PA0027324	Shamokin	Shamokin-Coal Twp. SA	?	CO&A signed on 4/16/01.
PA0028631	Emporium	Mid-Cameron Authority	?	PADEP CSO table (5/02) indicates plan is to capture all water (except catastrophic events).
PA0028673	Gallitzin	Gallitzin Boro Sewer & Disposal	?	No data available.
PA0036820	Galeton	Galeton Boro	N	LTCP scheduled submittal date is 04/07/03.
PA0037711	Everett	Everett Boro Area MA	?	No data available.
PA0038920	Burnham	Burnham Boro Authority	?	No data available.
PA0043273	Hollidaysburg	Hollidaysburg Regional WWTP	?	No data available.
PA0043877	Pottsville	Greater Pottsville SA (minor)	?	No data available.
PA0043885	Pottsville	Greater Pottsville SA (major)	?	No data available.
PA0046159	Houtzdale	Houtzdale Boro SA	N	PADEP reported (6/18/02) that all CSO outfalls have been eliminated.
PA0070041	Manhanoy	Manhanoy City MA	?	No data available.
PA0070386	Shenandoah	Shenandoah Municipal SA	?	No data available.
PAG062202	Dickson	Lackawanna River SA - MO	?	No data available.

Exhibit I-6. CSOs in the Chesapeake Bay

NPDES No.	City	Name	LTCP	LTCP Status
PAG064801	Shamokin	Shamokin City	N	CO&A signed on 4/16/01.
PAG064802	Coal Twp.	Coal Township	N	CO&A signed on 5/30/01.
VA0024970	Lynchburg	Lynchburg STP	?	No data available.
VA0063177	Richmond	City of Richmond	Y	LTCP approved 3/20/89. VADEQ informed EPA in December 2000 that there were 31 CSOs in lieu of 32 originally listed.
VA0087068	Alexandria	Alexandria CSS	Y	LTCP approved 4/23/99.
WV0020150	Morrefield	City of Moorefield	Y	LTCP submitted 1/2/02.
WV0021792	Petersburg	Petersburg	?	LTCP scheduled submittal date was 1/1/02.
WV0023167	Martinsburg	City of Martinsburg	Y	LTCP submitted 4/28/00.
WV0024473	Marlinton	City of Marlinton	?	LTCP scheduled submittal date was 1/1/02.
WV0024848	Davis	Town of Davis	Y	LTCP submitted 12/7/01.
WV0105279	Piedmont	City of Piedmont	N	New CSO community identified by WVDEP. 1998 NPDES permit has no CSO language in it.

LTCP = Long Term Control Plan

MDE = Maryland Department of Environment

VADEQ = Virginia Department of Environmental Quality

PADEP = Pennsylvania Department of Environmental Protection

WVDEP = West Virginia Department of Environmental Protection

CO&A = Consent Order and Agreement

NMC = Nine Minimum Controls

Source: U.S. EPA (2002).

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